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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,919	11/21/2003	Igor Timofeev	100318.00118	2393

7590 03/09/2005
Robert C. Klinger
Jackson Walker LLP
Suite 600
2435 North Central Expressway
Richardson, TX 75080

EXAMINER

DINH, TRINH VO

ART UNIT PAPER NUMBER

2821

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,919	Applicant(s) TIMOFEEV ET AL.	
	Examiner Trinh Vo Dinh	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9-14,18,20-23,25-28 is/are rejected.
- 7) ☒ Claim(s) 3,8,15-17,19 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/01/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 4-5 and 20 are objected to because of the following informalities:

In claim 4, line 3, "the first set of feedlines" has no antecedent basis. It should be changed to --the first set of feedlines--.

In claim 5, line 3, "the second set of striplines" has no antecedent basis.

In claim 20, "The antenna array" and "the first set of feedlines" have no antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4-7, 9-10, 14, 18, 20-23 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Le et al (US 2005/0001778).

With respect to claims 1 and 10, Lee discloses, in Fig. 1, an antenna comprising a ground plane (12, paragraph [2206]) having an upper surface and an opposing lower surface, a plurality of dipoles (16) extending outwardly from the upper surface, a set of feedlines (30) disposed proximate the upper surface and coupled to the dipoles (14), a set of striplines (64 in Fig. 4) disposed upon the lower surface and coupled through the ground plane to the set of feedlines, and at least one sliding dielectric member (56) adjustably disposed proximate a portion of the set

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of striplines (64, 65) and adapted to shift a phase velocity of a signal communicating therepast to the dipoles (claims 13-14 of Lee).

With respect to claims 2 and 4-5 and 18, 20-21, Lee discloses the dipoles (14) are configured in sets (Fig. 3), each of the dipole sets having a single respective feedline (30) coupled thereto, and dipoles (14) are configured in pairs of orthogonal dipoles and the set of feedlines (30 in Fig. 1) comprise a divider. Lee further discloses an electrically non-conductive member (68) disposed between the ground plane (50) and the set of striplines (64).

With respect to claims 6-7, 22-23 Lee discloses the set of striplines (64) are disposed on the electrically non-conductive member (50), and the set of feedlines (30) are spaced above the ground plane (12) and separated therefrom by an air dielectric (col. 2, lines 1-4 discloses air dielectric stripline).

With respect to claims 9 and 25, Lee discloses comprising at least one cable (76) extending across the lower surface and coupled to the set of striplines.

With respect to claim 14, Le discloses a plurality of adjustment members (a shift rod) in claim 14 of Le), one said adjustment member being coupled to each of the sliding dielectric members (56) of each of the antennas (14), the adjustment members adapted to adjust a beamtilt of the respective antenna.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11-13 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le in view of Darrel Helms (WO 97/06576 of record).

With respect to claim 11, Le discloses every feature of the claimed invention except the respective ground planes of each antenna generally face inwardly towards one another. Darrel discloses, in Fig. 4, each antenna (36) being coupled to another adjacent antenna (36) such that the dipoles of each antenna extend outwardly, and the respective ground planes (32a) of each antenna generally face inwardly towards one another. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ Darrel's arrangement to Le's antennas and ground planes in order to provide the antennas with smaller and narrower physical profiles.

With respect to claims 12-13, Le discloses the coupled antennas (360) collectively form a multi-sector antenna array extending 360°, and comprising 3 of the antennas, each of the antennas covering generally a 120° sector.

With respect to claim 28, Darrel discloses the antenna array (24) being configured as an omnidirectional antenna (page 6, line 8).

6. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le as modified by Darrel and further in view of Tricoles et al (USP 3,761,937).

With respect to claim 26, Le as modified by Darrel discloses every feature of the claimed invention except the radome including at least one metal portion thereon. Tricoles discloses the radome including at least one metal portion thereon (col. 1, lines 13-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make

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Darrel's radome from metal as taught by Tricoles in order to reduce the radar cross section of the aircraft (Tricoles: col. 1, lines 20+).

With respect to claim 27, Tricoles discloses metal portion (28) being an electrically conductive paint (col. 3, lines 1-5).

Allowable Subject Matter

7. Claims 3 and 8, 15-17, 19, 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The cited art of record fails to teach the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidably disposed thereupon as defined in claims 3 and 19, or a second ground plane disposed on the electrically non-conductive member and opposing the set of striplines as defined in claims 8 and 24, or each of the ground planes (32a) have bend edges adapted to control a lateral beam lobe of the respective antenna as defined in claim 15.

Inquiry

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Trinh Vo Dinh', with a long horizontal flourish extending to the right.

*Trinh Vo Dinh
March 07, 2005*